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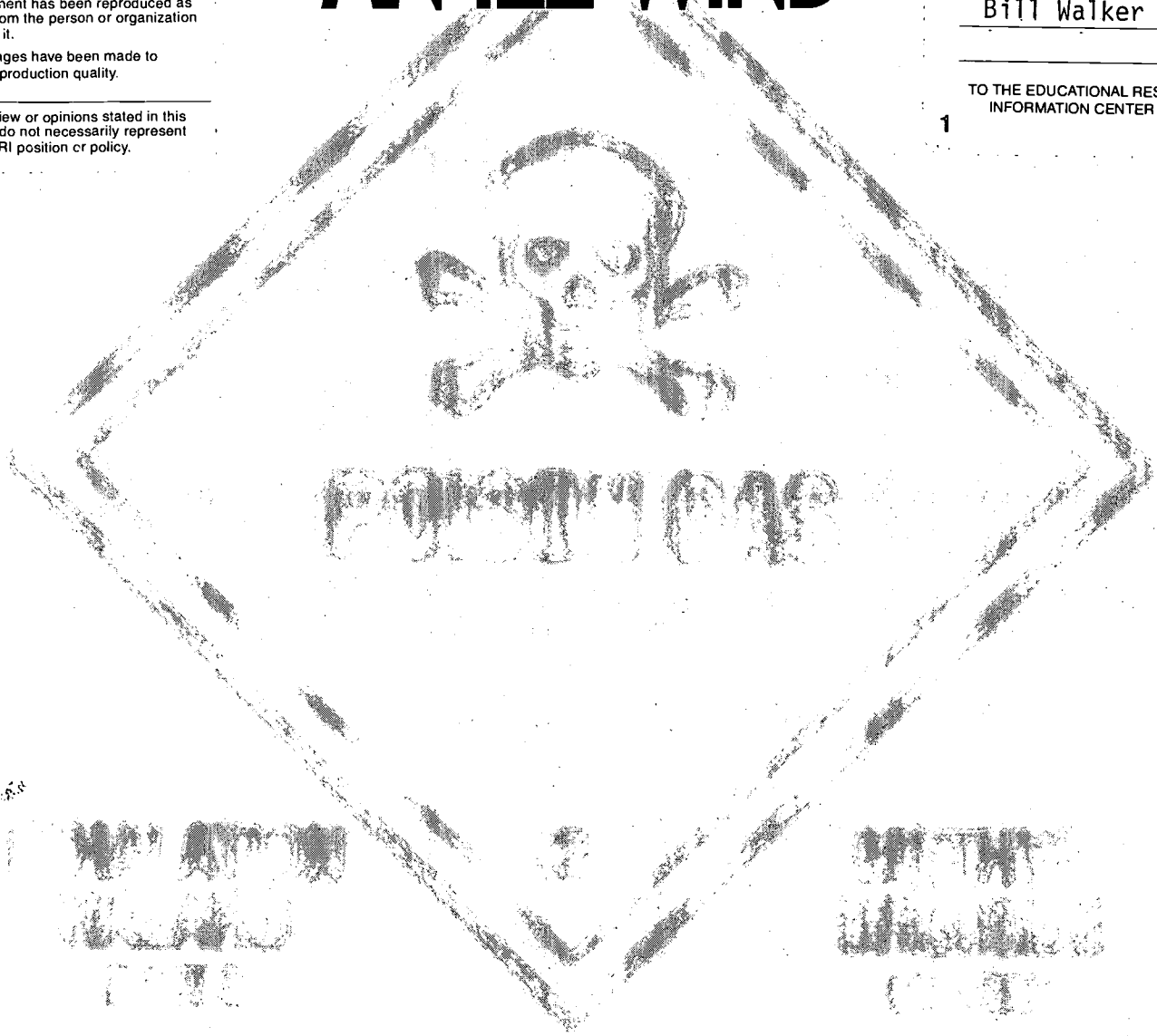
ABSTRACT

A California study investigates the use of the toxic pesticide methyl bromide near the state's public schools, explains why proposed safety rules have failed to protect children and others from exposure, and examines regions at particular exposure risk. Study results show an increasing exposure to methyl bromide near schools already at risk while statewide use is decreasing. Further results show about one-third of the schools are a half mile or less from methyl bromide application sites, that some areas expose students many times per season to the pesticide, that potential exposure falls disproportionately on children of color, and that the strawberry crop appears to account for over half of all methyl bromide applied near California schools. Recommendations for regulations are presented and include the need for banning methyl bromide applications within 1,000 feet of schools; the development of "acceptable" exposure level standards tenfold higher for protecting children; notification in writing of potential methyl bromide applications that will occur within 1 mile of schools, facilities, and residences; and the need to increase research funding into finding alternatives for methyl bromide. (Contains 10 references). (GR)

AN ILL WIND



METHYL BROMIDE USE NEAR CALIFORNIA SCHOOLS 1998

ENVIRONMENTAL WORKING GROUP™

ZEV ROSS • BILL WALKER

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Environmental Working Group

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Environmental Working Group
1718 Connecticut Ave. NW, Suite 600
Washington, DC 20009
Tel: (202) 667-6982
Fax: (202) 232-2592
info@ewg.org

www.ewg.org

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EXECUTIVE SUMMARY

More than 2.3 million pounds of the acutely toxic pesticide methyl bromide were applied near 455 public schools in California in 1998, according to state records of pesticide use analyzed by the Environmental Working Group. Methyl bromide, a volatile nerve gas, is a Category 1 acute toxin, the most hazardous classification of toxic chemicals, and causes birth defects and brain and nervous system damage at low doses in animal experiments.

State enrollment figures show that 68,238 children attended 87 schools that were 1.5 miles or less from fields treated with at least 10,000 pounds of methyl bromide in 1998. The potential for exposure was greatest in the coastal counties of Central California, where vast amounts of methyl bromide are applied to strawberry fields. The chemical, used in agriculture to sterilize fields before planting, is also used in warehouses to fumigate harvested commodities before shipping and in homes to kill termites and other insects.

Twelve schools -- five in Monterey County, three in Ventura County, three in Santa Barbara County and one in Santa Cruz County -- were within 1.5 miles of fields with more than 45,000 pounds of methyl bromide use in 1998, and three of these schools were near more than 100,000 pounds of use. (Table 1.) Use near these highest-risk schools is increasing sharply.

Of the 13.9 million pounds of methyl bromide applied each year in California, more than one-sixth is used near schools.

Statewide methyl bromide use in 1998, the latest year for which data is available, was 13.9 million pounds. (CDPR 1999a.) The fact that more than one-sixth of that total was applied near schools is of particular concern, because the fumigant is typically applied as a volatile gas which is injected into the soil, then covered with plastic tarps in an attempt to keep the compound from drifting away. Air monitoring tests conducted by both the state and EWG show that after a field is treated with methyl bromide, potentially harmful levels of the gas routinely drift onto nearby properties and can remain in the air for 48 hours or longer. (CDPR 1997, EWG 1997a.)

The state's currently proposed methyl bromide regulations, issued under a court order 11 years after they were required by law, will not adequately protect schoolchildren and surrounding communities. Although the administration of Gov. Gray Davis is touting its reluctant compliance with the law as proof of its commitment to stronger environmental protections, in some cases the proposed regulations call for smaller protective buffer zones than were in effect during the Wilson Administration. Despite repeated recommendations from DPR's own scientists, they do not provide an extra margin of safety to protect children. Nor do they adequately restrict methyl bromide use near schools, allowing application of the chemical in adjacent fields when students and others are present for after-school activities or community events.

Table 1. Schools within 1.5 miles of at least 45,000 pounds of methyl bromide use in 1998.

Rank	School	City	County	Methyl Bromide Use 1998 (lbs)	Enrollment (1998)
1	Rio Mesa High	Oxnard	Ventura	144,178	2,438
2	Rio Plaza Elementary	Oxnard	Ventura	126,530	444
3	Alisal High	Salinas	Monterey	105,567	1,796
4	Pajaro Middle	Watsonville	Santa Cruz	76,297	504
5	Chavez (Cesar E.) Elementary	Salinas	Monterey	73,932	907
6	La Joya Elementary	Salinas	Monterey	65,444	937
7	Ontiveros (Juan Pacifico) Elementary	Santa Maria	Santa Barbara	51,358	913
8	Gavilan View Middle	Salinas	Monterey	50,371	961
9	Santa Rita Elementary	Salinas	Monterey	50,371	909
10	Bonita Elementary	Santa Maria	Santa Barbara	45,827	907
11	Adolfo Camarillo High	Camarillo	Ventura	45,375	2,650
12	Tunnell (Martin Luther) Elementary	Santa Maria	Santa Barbara	45,257	808
	Total				14,174

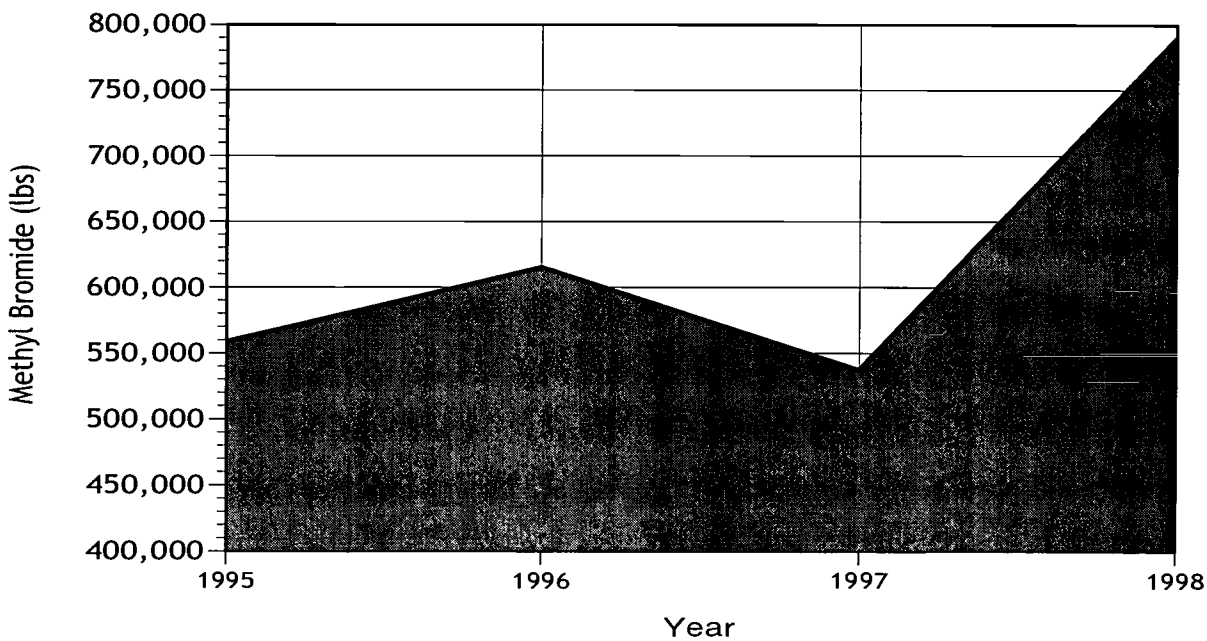
SOURCE: Environmental Working Group, from 1998 pesticide use reports.

FINDINGS

EWG's computer-assisted analysis of California's 1998 Pesticide Use Reporting database found:

• Although total statewide use of methyl bromide appears to be decreasing in recent years, its use is intensifying near the schools already most at risk of exposure. At the ten schools located near the greatest amount of methyl bromide use in 1998, use was up by 231,000 pounds since 1995 - a 41 percent increase in four growing seasons. (Fig. 1.)

Fig. 1. Use of methyl bromide near the 10 California schools most at risk rose by 41 percent from 1995 to 1998.



SOURCE: Environmental Working Group, from pesticide use reports.
Note: Cesar E. Chavez Elementary School in Salinas opened in 1996

Table 2. Schools where methyl bromide was applied within 1.5 miles on 15 or more days in 1998.

Rank	School	City	County	Methyl Bromide 1998 (lbs)	Number of Dates Applied*
1	Bonsall Elementary	Bonsall	San Diego	14,264	48
2	Canalino Elementary	Carpinteria	Santa Barbara	9,477	39
3	Oxnard High	Oxnard	Ventura	40,932	35
4	Main Elementary	Carpinteria	Santa Barbara	7,115	31
5	Carpinteria Middle	Carpinteria	Santa Barbara	7,115	31
6	Longfellow	Azuza	Los Angeles	4,577	23
7	Dalton (Henry) Elementary	Azuza	Los Angeles	4,577	23
8	Lee (Charles H.) Elementary	Azuza	Los Angeles	4,577	23
9	Pajaro Middle	Watsonville	Santa Cruz	76,297	22
10	Harris (Ada W.) Elementary	Cardiff-by-the-Sea	San Diego	4,825	20
11	Cardiff Elementary	Cardiff-by-the-Sea	San Diego	4,825	20
12	San Dieguito H.S. Academy	Encinitas	San Diego	4,825	20
13	Ocean Knoll Elementary	Encinitas	San Diego	4,825	20
14	Brekke (Norman R.) Elementary	Oxnard	Ventura	36,469	20
15	Alisal High	Salinas	Monterey	105,497	20
16	Renaissance High	Santa Paula	Ventura	38,091	19
17	Rio Real Elementary	Oxnard	Ventura	40,321	19
18	Rio Del Valle Junior High	Oxnard	Ventura	40,321	19
19	Rio Mesa High	Oxnard	Ventura	144,085	19
20	Rio Plaza Elementary	Oxnard	Ventura	126,437	19
21	Mar Vista Elementary	Oxnard	Ventura	32,327	18
22	Ocean View Junior High	Oxnard	Ventura	32,327	18
23	Gavilan View Middle	Salinas	Monterey	50,371	18
24	Santa Rita Elementary	Salinas	Monterey	50,371	18
25	La Joya Elementary	Salinas	Monterey	65,444	18
26	Lakeview Middle	Watsonville	Santa Cruz	41,274	18
27	Carpinteria High	Carpinteria	Santa Barbara	15,186	17
28	Livingston High	Livingston	Merced	33,669	17
29	Rio Lindo Elementary	Oxnard	Ventura	34,766	17
30	Ontiveros (Juan Pacifico) Elem.	Santa Maria	Santa Barbara	51,358	15

SOURCE: Environmental Working Group, from 1998 pesticide use reports.

**Number of distinct dates with at least 100 lbs applied*

• Methyl bromide use near schools is heaviest in Ventura, Monterey and Santa Cruz counties. Of all California children who attended schools within 1.5 miles of more than 25,000 pounds of methyl bromide use, 70 percent — more than 28,000 - were in one of the three counties. Of the 43 schools within 1.5 miles of more than 25,000 pounds of use, 29 are in those three counties. (Many California schools are far closer than 1.5 miles to methyl bromide applications. About one-third of the schools in EWG's analysis are half a mile or less from application sites, and dozens of schools are known by observation to be directly adjacent to fields where methyl bromide and other toxic pesticides are used.)

• In areas of heavy methyl bromide use, some students face potential exposure not just once or twice per season, but many times a year. Thirty different schools were within 1.5 miles of fields that were treated with at least 100 pounds of methyl bromide on 15 or more different days, and one - Bonsall Elementary in San Diego County — averaged nearly one nearby application a week. (Table 2.) In light of this it is troubling that the proposed regulations do not even attempt to regulate long-term exposures.

Table 3. Ethnic makeup of schools near the most methyl bromide use.

Rank	School	City	Percent Non-Anglo (1998)
1	Rio Mesa High	Oxnard	76%
2	Rio Plaza Elementary	Oxnard	90%
3	Alisal High	Salinas	98%
4	Pajaro Middle	Watsonville	95%
5	Chavez (Cesar E.) Elementary	Salinas	98%
6	La Joya Elementary	Salinas	73%
7	Ontiveros (Juan Pacifico) Elementary	Santa Maria	90%
8	Gavilan View Middle	Salinas	76%
9	Santa Rita Elementary	Salinas	83%
10	Bonita Elementary	Santa Maria	91%
	Total		**85%**

SOURCE: Environmental Working Group, from 1998 pesticide use reports and California Department of Education enrollment figures.

High risk of methyl bromide exposure exists not only in major growing areas, but communities across California.

• Potential exposure to methyl bromide at schools falls disproportionately on children of color. Demographic information available for the ten schools nearest the most methyl bromide use in 1998 shows that 85 percent of the students enrolled were non-Anglo and 76% were Latino. (Table 3.) Four of these ten high-risk schools were more than 90 percent Latino.[1]

• Although Central Coast counties use much more methyl bromide than any other part of the state, thousands of children in other areas also face potential exposure to large amounts of the chemical. In Orange County, more than 35,000 children attended 40 schools within 1.5 miles of 79,000 pounds of methyl bromide use, and in Fresno County, more than 26,000 students attended 45 schools near 97,000 pounds of use.

• Measured by crop, strawberries account for over half of the methyl bromide applied near California schools, with 1.2 million pounds in 1998. This was nearly five times more than the next highest use, preplant soil fumigation of otherwise unspecified crops.

RECOMMENDATIONS

Tens of thousands of California children are at risk of exposure to methyl bromide while attending school, playing on school grounds, or simply living in their neighborhoods near these schools. Schools are unique environments, and parents have a right to know their kids' classrooms are safe and healthy.

But schools are also symbols of a community: Where there are schools, there are houses full of families. The potential for exposure to methyl bromide is a risk that is not restricted to schools in predominantly agricultural areas, but exists in rural, suburban and urban communities across California.

This year, under a court order, California is belatedly complying with a 1989 state law requiring adoption of methyl bromide regulations. (FOE 1999.) The Department of Pesticide Regulation's proposed rules were released in January and will be the subject of public hearings in March.

Then the National Academy of Sciences is expected to issue a peer review of DPR's methyl bromide risk assessment, the document that is the basis for setting "safe" levels of methyl bromide exposure. The regulations that emerge from this process are scheduled to take effect in June 2000.

Methyl bromide should not be applied near schools or homes, and safety standards must fully protect children's health.

Based on evidence of methyl bromide's acute toxicity, extreme volatility and its heavy use near schools and homes, EWG urges that the final regulations include the following provisions:

• Methyl bromide applications should be banned at all times within 1,000 feet of schools, daycare centers, nursing homes and residences.

• Standards for "acceptable" levels of methyl bromide exposure must provide an extra tenfold margin of safety for children.

• All schools, other facilities and residences within 1 mile should be notified in writing of upcoming methyl bromide applications.

In addition:

• The Legislature should immediately increase funding for research into less-toxic alternatives to methyl bromide, and for incentives and assistance to farmers switching from methyl bromide to non-chemical alternatives.

• All replacements for methyl bromide - chemical and non-chemical - must be shown to have reduced environmental and health risk. The potential health risks of proposed chemical alternatives to methyl bromide, including Telone (1,3-D), metam sodium and chloropicrin, must be fully evaluated before their continued use is allowed within 1,000 feet of any school.

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[1] In 1999, five Latino families with children in California schools near heavy methyl bromide use filed a Title VI federal civil rights complaint against DPR, charging that the disproportionate impact on children of color constituted a pattern of discrimination. U.S. EPA is investigating the complaint but had issued no findings as of February 2000.

PROPOSED 'SAFETY' RULES FAIL TO PROTECT CHILDREN & OTHERS

As both the population of California and the state's agricultural production continue to expand, the areas the Department of Pesticide Regulation refers to as "the agricultural- residential interface" have become front lines in the conflict between public health and the increasing reliance by agribusiness on toxic chemicals. Across California, methyl bromide and other pesticides are applied daily to croplands in close proximity to suburban and rural neighborhoods and communities. California schools, which in rapidly growing areas are often built right next to agricultural fields, are especially vulnerable to pesticide drift and serve as an indicator of exposure in surrounding communities.

Methyl bromide is classified by the U.S. EPA as a Class I acute toxin, a designation reserved for the most dangerous substances, and in low doses is known to cause birth defects and brain and nerve damage in laboratory animals. Methyl bromide is also a powerful destroyer of the Earth's protective ozone layer, and under international treaty is scheduled to be banned in the United States and other developed nations in 2005. Methyl bromide was first targeted for phaseout in California by the state Birth Defects Prevention Act of 1984. However, three previous state or national deadlines for ending the use of methyl bromide — in 1991, 1996 and 2001 — have been extended after intense lobbying from pesticide and agricultural interests, and methyl bromide manufacturers and users remain aggressive in their efforts to delay or limit the next scheduled ban.

Instead of protecting public health, some of the state's proposed methyl bromide rules are a step backward.

California, where more methyl bromide is used in closer proximity to more people than anywhere else in the world, is currently developing statewide methyl bromide safety regulations that are scheduled to take effect in June 2000. In 1999, a coalition of environmental groups including EWG won a state Superior Court lawsuit charging that DPR had failed to obey a 1989 law requiring the adoption of uniform and enforceable statewide regulations. Instead, DPR issued a set of informal "use guidelines," developed without public input or legislative oversight, enforced at the discretion of the state's 58 county agricultural commissioners, and subject to change without public notice. (FOE et al v. DPR, 1998.)

Unfortunately, DPR's proposed regulations, drafted in response to the court order, offer little improvement. Indeed, in some important areas they retreat from the level of public health protection provided by the use guidelines in effect during the Wilson Administration.

Until the final months of the Wilson Administration, the minimum buffer zone, or area surrounding an application where the chemical may not be used, was 100 feet from residences. The regulations proposed by the Davis Administration set the minimum at 60 feet, with the need for larger safety zones left to the discretion of county agriculture officers.

In a December 1999 letter to DPR Director Paul Helliker, several key legislators representing districts where hundreds of thousands of pounds of methyl bromide are used annually expressed disappointment that the Department had betrayed the "wide expectation that the new regulations would offer significantly increased public health protections." They said:

> "While the Department's draft represents incremental progress on some methyl bromide safety issues . . . for the most part the draft appears to merely write into formal regulations the existing inadequate guidelines and fails to take advantage of the opportunity to set rules that provide the extra margin of safety needed for use of such a dangerous chemical. . . . We urge you to strengthen the draft regulations . . . to incorporate larger, more protective buffer zones, to set methyl bromide exposure standards that provide an adequate margin of safety to children and other sensitive populations, and provide comprehensive notification to all workers, residents and other persons in the vicinity of impending methyl bromide field fumigations." (Figueroa 1999.)

State proposal 'fails to set rules that provide the extra margin of safety needed for such a dangerous chemical.'

Scientists at the state's environmental health office and expert consultants hired by the California Rural Legal Assistance Foundation (CRLAF) have identified a number of serious flaws in the state's proposal, including three major issues that bear directly on the issue of potential at-school exposures.

'SAFE' LEVELS OF EXPOSURE FOR CHILDREN

The draft regulations would attempt to limit adults and children living, working or going to school near methyl bromide applications to exposures of no more than 210 parts per billion (ppb) of the chemical in the air over a 24-hour period. It does not attempt to address residential exposures to larger amounts for shorter periods, or to smaller amounts for longer periods. This proposed exposure standard represents no change from the current guidelines.

But exposures to the highly volatile gas, even when applied properly, are not so easily controlled. In 1996 and 1997, more than three dozen air samples taken by EWG near methyl bromide applications in Monterey, Santa Cruz, Ventura and San Luis Obispo counties detected the compound in concentrations well above the proposed exposure standard - in one case, at a Watsonville elementary school, 10 times the "safe" level. (EWG 1997a.)

Further, DPR claims that the proposed exposure level is based on sound science and provides an adequate margin of safety for adults and children. In fact, the regulatory history of methyl bromide in California is one of repeated disregard for scientific evidence that children are more susceptible to the effects of toxic chemicals than adults:

• In 1993 the Wilson Administration overturned a decision by scientists in the state Office of Environmental Health Hazard Assessment (OEHHA) that would have added methyl bromide to the Proposition 65 list of chemicals tightly regulated as causes of birth defects. (AFL-CIO et al v. Wilson 1993.)

California has repeatedly ignored sound science when setting methyl bromide rules.

• In 1992 and again in 1999, as part of the process of preparing the current proposed methyl bromide regulations, DPR's own scientists recommended the addition of an additional safety factor to protect children, but were overruled by the department's management. (CDPR 1992, CDPR 1999b.) Scientists from DPR's Medical Toxicology and Worker Safety units have told CRLAF's experts that "the Department's scientific experts on health effects of methyl bromide do not have the authority to decide whether or not to use additional safety factors but rather are limited" to a level most regulatory agencies consider acceptable for adults, but not children. (Katten 1999.)

• In August 1999, OEHHA reviewed DPR's methyl bromide risk characterization report, prepared as part of the draft regulatory package, and also found the proposed exposure limits inadequate. OEHHA said:

> "The application of an additional uncertainty factor to protect infants and children appears to be warranted based on the acute neurotoxic effects of methyl bromide. . . . There is evidence suggesting that children may be more sensitive to these effects than adults." (OEHHA 1999.)

In recent technical comments to the National Academy of Sciences on DPR's methyl bromide risk assessment, CRLAF's consulting scientists also recommended a tenfold additional margin of safety for children. Children of farmworkers may not only breathe methyl bromide in the air both at home and at school, but are also exposed through their skin and clothes when they hug their parents or play in the yard. The scientists said:

> "We have good reason to be concerned that children may be more susceptible to exposure to methyl bromide than adults. . . . Given that results show that methyl bromide causes changes in the brain at very low concentrations, this is a critical concern. The neurological system in children is still growing and differentiating until well into adolescence and is therefore more susceptible to insult with permanent ramifications." (Kyle 1999.)

BUFFER ZONES

The state's draft regulations set a minimum residential buffer zone of 60 feet and a worker buffer zone -- the distance between methyl bromide applications and nearby farmworkers -- of 50 feet. The minimum residential buffer zone is a retreat of 40 feet from the current guidelines, and minimum buffer zone for workers is a miniscule increase of 20 feet. (The proposed worker buffer zone is half the size commonly set in 1997-98, after protests forced minimal methyl bromide use reforms, but before DPR reversed those gains, deciding without public notice that "new science" indicated workers didn't need as much protection as neighboring residents.)

Again, the proposed buffer zones are based on wishful thinking, not how methyl bromide actually behaves in the real world. Both EWG and DPR air monitoring has routinely detected methyl bromide, often in concentrations exceeding the exposure standards, drifting well beyond the required buffer zones. At a senior citizen's mobile home park in San Luis Obispo County in 1997 EWG detected high levels of methyl bromide drifting more than 450 feet from an application site, and DPR has measured high levels of methyl bromide more than 500 feet from an application. (EWG 1997b, DPR 1997.)

Air monitoring has routinely detected high levels of methyl bromide drifting beyond buffer zones.

Wind, temperature, humidity and air inversions are major factors in whether and how far methyl bromide may drift. According to a CRLAF air toxics consultant, in setting the buffer zones DPR strayed from accepted air modeling practice by using hypothetical weather scenarios instead of actual weather data available for the state's different growing regions. As a result:

> ". . . [T]he DPR recommended buffer zone distances are much smaller than those I calculated. For example, for a 10 acre field . . . DPR proposes a buffer zone of 100 feet. This contrasts to a value of 320 feet using either Anaheim or Fresno weather data. . . . Because of this, the DPR recommended buffer zone distances will not exclude 24-hour methyl bromide exposures at or above 210 ppb and do not adequately protect the public's health." (Sears 2000.)

METHYL BROMIDE USE NEAR SCHOOLS

The state's draft says methyl bromide may not be used within 36 hours of the beginning of a scheduled class session at an "adjacent" school. Currently, prohibiting methyl bromide applications during school hours is at the discretion of county agriculture commissioners on a case-by-case basis. Under the current guidelines, schools are among the "sensitive sites" where agriculture commissioners may require minimum buffer zones of 200 feet. The draft does not define how close a school must be to be considered "adjacent," but it appears that schools farther than 200 feet from an application site would not automatically be protected.

DPR is touting the 36-hour window as a major advance, but closer examination shows its shortcomings. Once again, air monitoring has established that elevated levels of methyl bromide may remain in the air for well over 48 hours after application. In the case of the Watsonville school monitored by EWG in 1997, although the fumigant was applied on a Saturday morning, concentrations of methyl bromide approaching the proposed exposure limit remained in the air near the school through Monday afternoon, when more than 700 children were in attendance. (EWG 1997a.)

What's more, scheduling methyl bromide applications around class sessions ignores the fact that as year-round community centers, schools are often occupied after class hours. In documents supporting the draft, DPR acknowledges this fact but does not explain why after-school exposures are not addressed:

> "DPR intends 'school session' to mean a regular school session during the hours of classroom instruction. It is not intended to include times before or after school, or on evenings, weekends, or holidays during which people may be present on the school grounds for educational, extracurricular, administrative, maintenance or community activities." (CDPR 2000.)

Proposed rules would allow methyl bromide applications near schools during extracurricular and community events.

The bottom line is that DPR is stubbornly trying to accomplish the impossible: allowing the continued heavy use of methyl bromide while attempting to protect the public from exposure. For such an acutely toxic and volatile compound that is used in close proximity to large numbers of children and other sensitive populations, the only "safe" use may be no use.

THE FRONT LINES: REGIONS AT RISK

Methyl bromide near schools has become a prominent public health issue in several parts of the state, including the strawberry-growing Monterey/Santa Cruz and Ventura/Santa Barbara regions, where methyl bromide use is by far heaviest; and also San Diego, where protests by residents of a Latino neighborhood forced the Port of San Diego to stop using methyl bromide at a warehouse less than a mile from an elementary school. (Arner 1997.)

In four Central Coast Counties, more than 72,000 children attend school near methyl bromide use.

But EWG's analysis of statewide use patterns shows the high potential for at-school exposures in other regions, including the San Joaquin Valley and suburban Orange County. Although the amount of methyl bromide used in these areas is dwarfed by the vast quantities used on the Central Coast, some San Joaquin Valley or Orange County schools are close to individual fields where more methyl bromide is applied each growing season than some entire European nations use in a year. In Orange County, more than 35,000 children attended 40 schools within 1.5 miles of 79,000 pounds of methyl bromide use, and in Fresno County, more than 26,000 students attended 45 schools near 97,000 pounds of use. (Table 4.) Statewide, 43 schools in 11 different counties were within 1.5 miles of at least 25,000 pounds of use. (Table 5, Fig. 2).

Our analysis also shows that in areas where methyl bromide is heavily used near schools, most applications occur during the months school is in session.

Table 4. Counties with the largest number of schools within 1.5 miles of methyl bromide use.

Rank	County	Methyl Bromide Use 1998 (lbs)	No. Schools	Enrollment 1998
1	Ventura	569,578	42	37,437
2	Monterey	399,405	21	14,112
3	Santa Barbara	201,460	14	7,840
4	Santa Cruz	194,774	16	13,227
5	Merced	109,399	21	10,464
6	Fresno	97,111	45	26,031
7	San Joaquin	86,155	25	13,082
8	Orange	78,894	40	35,441
9	San Diego	77,710	27	22,198
10	Stanislaus	72,563	33	22,994
	Total	1,887,049	284	202,826

SOURCE: Environmental Working Group, from 1998 pesticide use reports.

Table 5. Schools within 1.5 miles of at least 25,000 pounds of methyl bromide use in 1998.

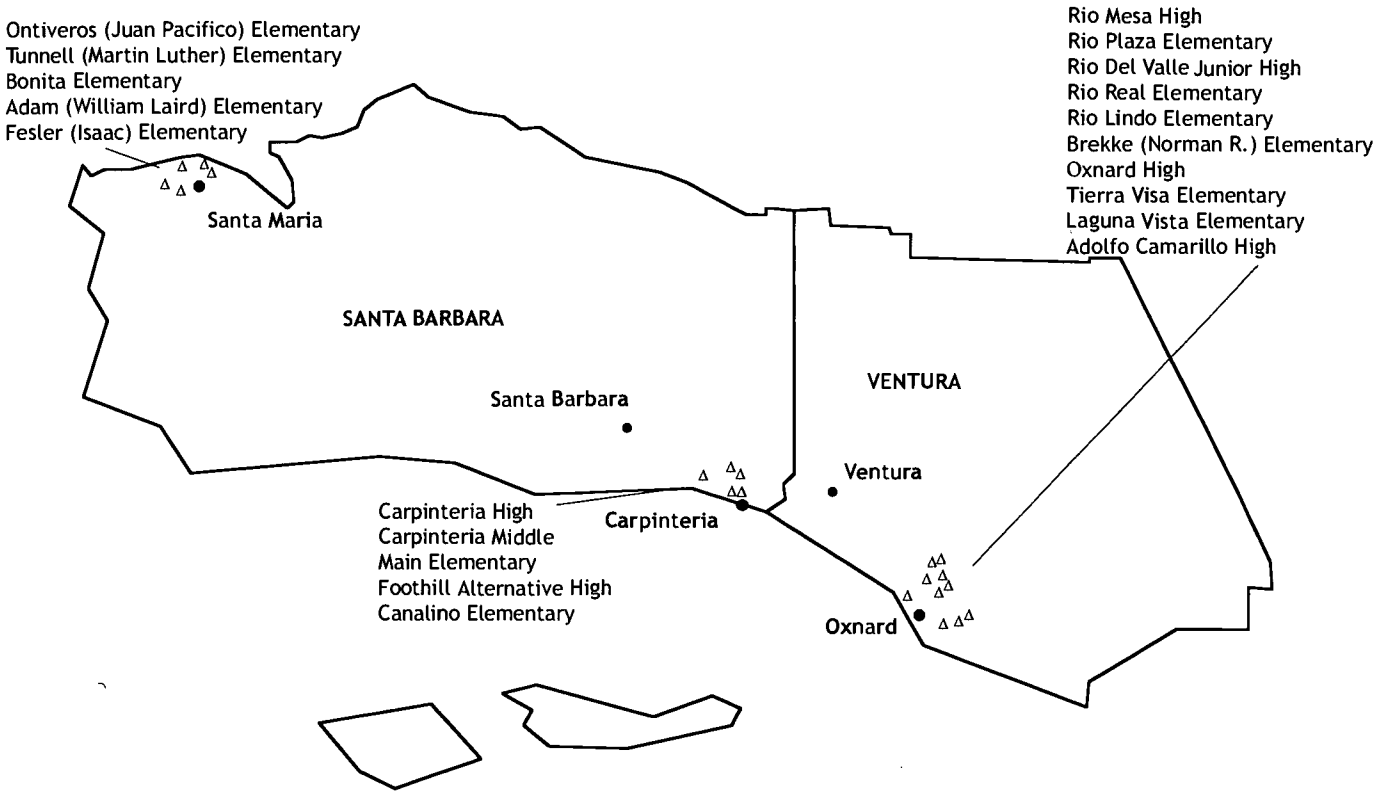
Rank	School	City	County	Methyl Bromide Use 1998 (lbs)	Total Enrollment 1998	Percent Non-Anglo
1	Rio Mesa High	Oxnard	Ventura	144,178	2,438	76%
2	Rio Plaza Elementary	Oxnard	Ventura	126,530	444	90%
3	Alisal High	Salinas	Monterey	105,567	1,796	98%
4	Pajaro Middle	Watsonville	Santa Cruz	76,297	504	95%
5	Chavez (Cesar E.) Elementary	Salinas	Monterey	73,932	907	98%
6	La Joya Elementary	Salinas	Monterey	65,444	937	73%
7	Ontiveros (Juan Pacifico) Elementary	Santa Maria	Santa Barbara	51,358	913	90%
8	Gavilan View Middle	Salinas	Monterey	50,371	961	76%
9	Santa Rita Elementary	Salinas	Monterey	50,371	909	83%
10	Bonita Elementary	Santa Maria	Santa Barbara	45,827	75	91%
11	Adolfo Camarillo High	Camarillo	Ventura	45,375	2,650	26%
12	Tunnell (Martin Luther) Elementary	Santa Maria	Santa Barbara	45,257	808	54%
13	Plainsburg Elementary	Merced	Merced	43,372	104	37%
14	Laguna Vista Elementary	Oxnard	Ventura	43,028	486	57%
15	Coachella Valley High	Thermal	Riverside	42,826	2,659	99%
16	Adam (William Laird) Elementary	Santa Maria	Santa Barbara	42,507	784	92%
17	Lakeview Middle	Watsonville	Santa Cruz	41,286	763	82%
18	Oxnard High	Oxnard	Ventura	41,007	3,030	78%
19	Rio Real Elementary	Oxnard	Ventura	40,321	692	94%
20	Rio Del Valle Junior High	Oxnard	Ventura	40,321	736	86%
21	Renaissance High	La Selva Beach	Santa Cruz	38,336	235	83%
22	Brekke (Norman R.) Elementary	Oxnard	Ventura	36,522	838	98%
23	Tierra Vista Elementary	Oxnard	Ventura	34,995	643	83%
24	Rio Lindo Elementary	Oxnard	Ventura	34,819	574	82%
25	Sierra Linda Elementary	Oxnard	Ventura	34,726	896	86%
26	Del Rio Elementary	Oceanside	San Diego	34,121	909	77%
27	Livingston High	Livingston	Merced	33,738	1,128	85%
28	Ohlone Elementary	Watsonville	Santa Cruz	32,921	567	98%
29	Mar Vista Elementary	Oxnard	Ventura	32,327	549	93%
30	Ocean View Junior High	Oxnard	Ventura	32,327	762	81%
31	Hall (E. A.) Middle	Watsonville	Santa Cruz	32,277	938	95%
32	Fesler (Isaac) Elementary	Santa Maria	Santa Barbara	31,557	795	80%
33	Calla High	Manteca	San Joaquin	31,307	241	48%
34	Linscott (J. W.) Elementary	Watsonville	Santa Cruz	30,068	180	43%
35	Watsonville High	Watsonville	Santa Cruz	30,068	2,646	89%
36	MacQuiddy (T. S.) Elementary	Watsonville	Santa Cruz	29,958	900	93%
37	Elkhorn Elementary	Castroville	Monterey	29,846	512	52%
38	Los Primeros Structured	Camarillo	Ventura	28,463	542	32%
39	Campus Park Elementary	Livingston	Merced	28,430	667	92%
40	Salsipuedes Elementary	Watsonville	Santa Cruz	27,456	705	90%
41	Lone Star Elementary	Fresno	Fresno	26,707	341	73%
42	Alamosa Park Elementary	Oceanside	San Diego	25,226	1,070	44%
43	Roosevelt Middle	Oceanside	San Diego	25,226	1,644	48%
	Total				40,878	78%

SOURCE: Environmental Working Group, from 1998 pesticide use reports.

Fig. 2. Schools within 1.5 miles of at least 25,000 pounds of methyl bromide use in 1998.

SOURCE: Environmental Working Group, from 1998 pesticide use reports.

Fig. 3. Schools in Ventura and Santa Barbara counties near the most methyl bromide use.



SOURCE: Environmental Working Group, from 1998 pesticide use reports.

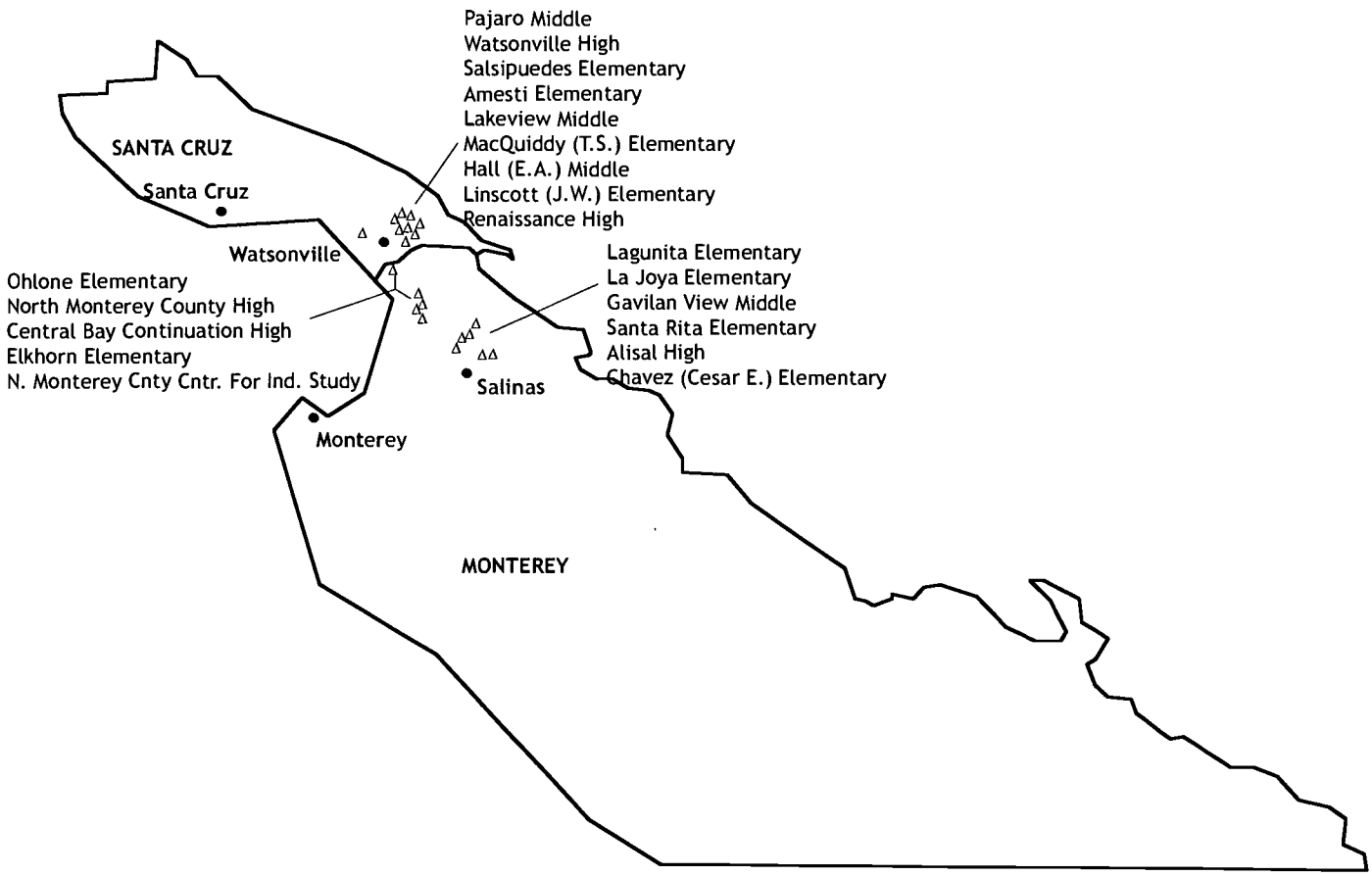
VENTURA & SANTA BARBARA COUNTIES

This region, where some potential school exposure zones straddle county lines, has more students and more schools near more methyl bromide use than anywhere else in the state. More than 770,000 pounds of methyl bromide were applied in 1998 within 1.5 miles of 56 schools in Ventura and Santa Barbara counties, with total enrollment of about 45,000 students. Of the 88 potentially most exposed schools in the state - all those near use of at least 10,000 pounds - almost one third are in Ventura or Santa Barbara counties.

The two schools near the largest amounts of methyl bromide use are both in Oxnard, Ventura County: Rio Mesa High School, with 144,178 pounds of methyl bromide used within 1.5 miles in 1998, and Rio Plaza Elementary, with 126,530 pounds. Oxnard may be the most at-risk city in the state, with 16 schools with total enrollment of 17,460 within 1.5 miles of at least 10,000 pounds of methyl bromide use in 1998.

About 85 percent of the methyl bromide applied near schools in the Ventura/Santa Barbara region is used on strawberries. Another 8 percent is used to treat outdoor or greenhouse-grown flowers and plants. Methyl bromide applications in the region peak during August, September and October, when 76 percent of the total is applied.

Fig. 4. Schools in Monterey and Santa Cruz counties near the most methyl bromide use.



SOURCE: Environmental Working Group, from 1998 pesticide use reports.

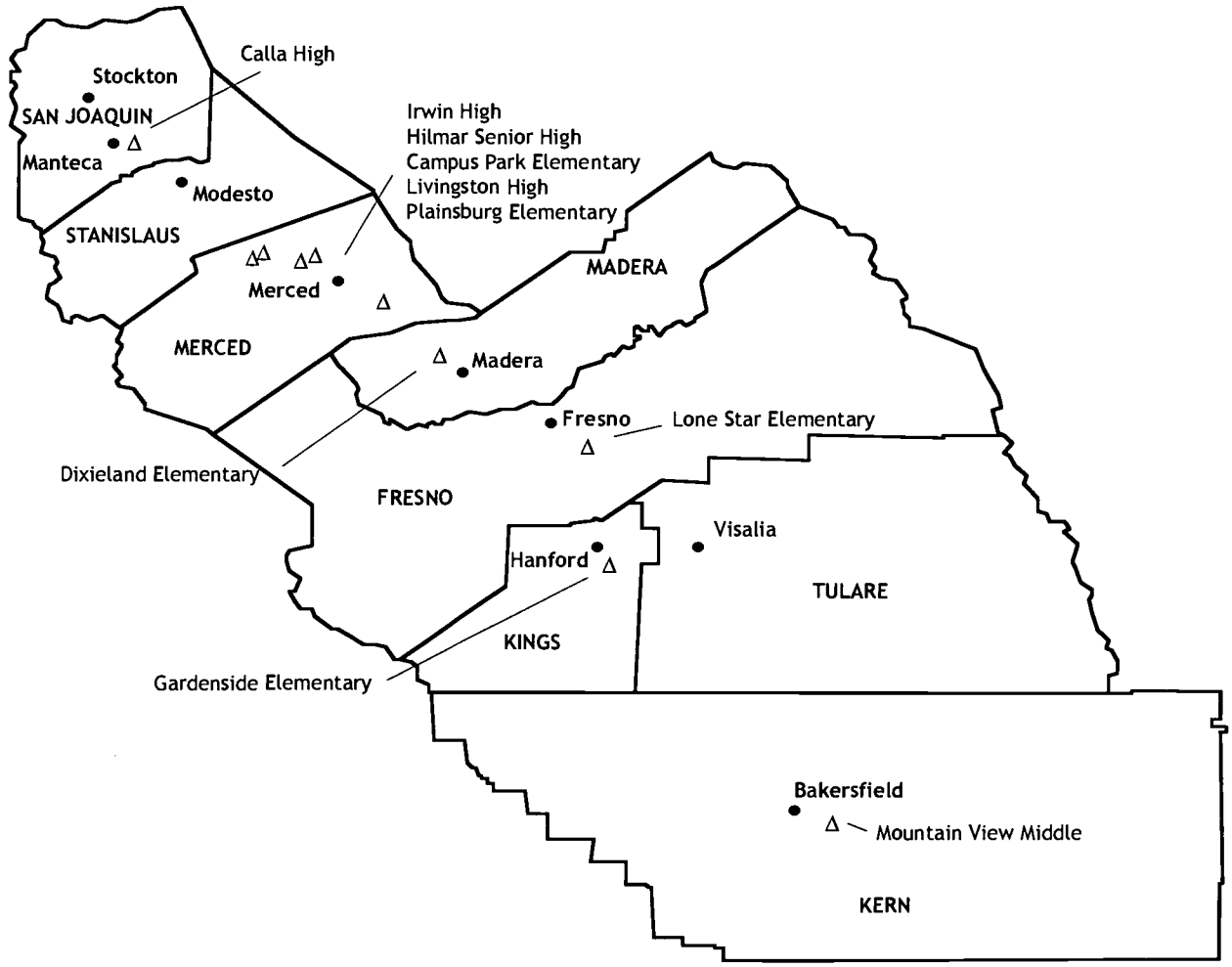
MONTEREY & SANTA CRUZ COUNTIES

A number of potential school exposure zones in the Monterey-Santa Cruz region also cross county lines. In 1998 approximately 600,000 pounds of methyl bromide were applied within 1.5 miles of 37 schools in Monterey and Santa Cruz counties, with total enrollment of 27,339.

The two counties had 23 schools within 1.5 miles of at least 10,000 pounds of methyl bromide use, and Alisal High School in Salinas, Monterey County, with 105,567 pounds of use within 1.5 miles in 1998, was the third most potentially exposed school in the state. The intensity of methyl bromide use near schools is greatest in Watsonville, Santa Cruz County, where 10 schools are near fields where at least 10,000 pounds of methyl bromide were applied in 1998.

More than 87 percent of methyl bromide used near schools in the region is applied to strawberries. About 80 percent of the total is applied in August, September and October, peaking in September.

Fig. 5. Schools in the San Joaquin Valley near the most methyl bromide use.



SOURCE: Environmental Working Group, from 1998 pesticide use reports.

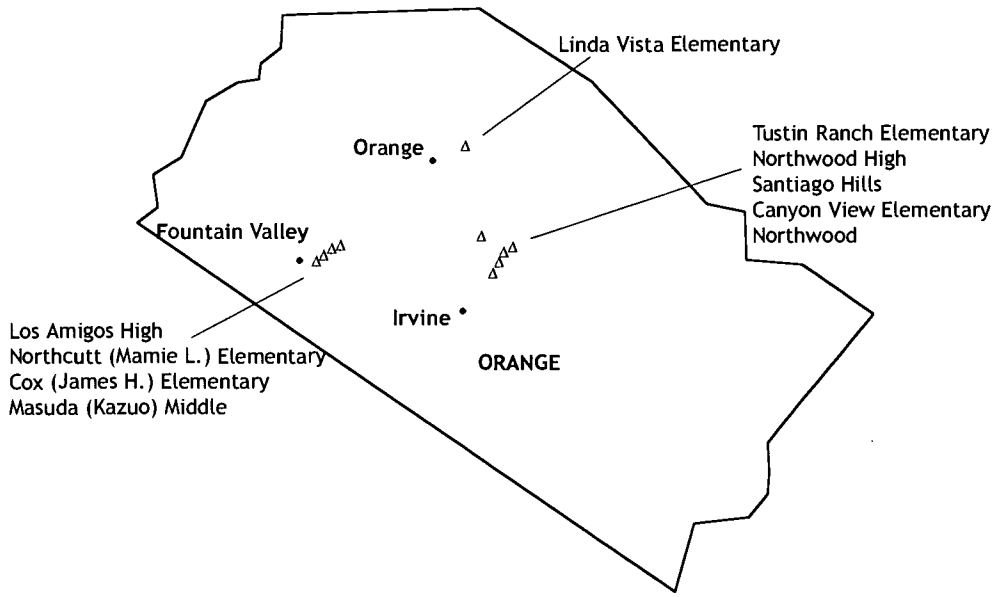
SAN JOAQUIN VALLEY

In 1998, more than 500,000 pounds of methyl bromide were applied within 1.5 miles of 156 schools in the San Joaquin Valley (Fresno, Kern, Kings, Madera, Merced, San Joaquin, Stanislaus and Tulare counties). The schools had total enrollment of about 90,000.

Sixteen schools in the San Joaquin Valley were near methyl bromide use of at least 10,000 pounds. The most intense use near schools was in Merced County, where five schools were within 1.5 miles of an average 24,000 pounds of use in 1998.

About 27 percent of the methyl bromide used near schools in the region is used for preplant soil application of unspecified crops. Sixteen percent is used on outdoor container or field plants, 14 percent on sweet potatoes and another 14 percent on almonds. Although methyl bromide applications in the Valley are distributed throughout the year, 25 percent of use near schools is in November and December, with another 25 percent in April and May.

Fig. 6. Schools in Orange County near the most methyl bromide use.



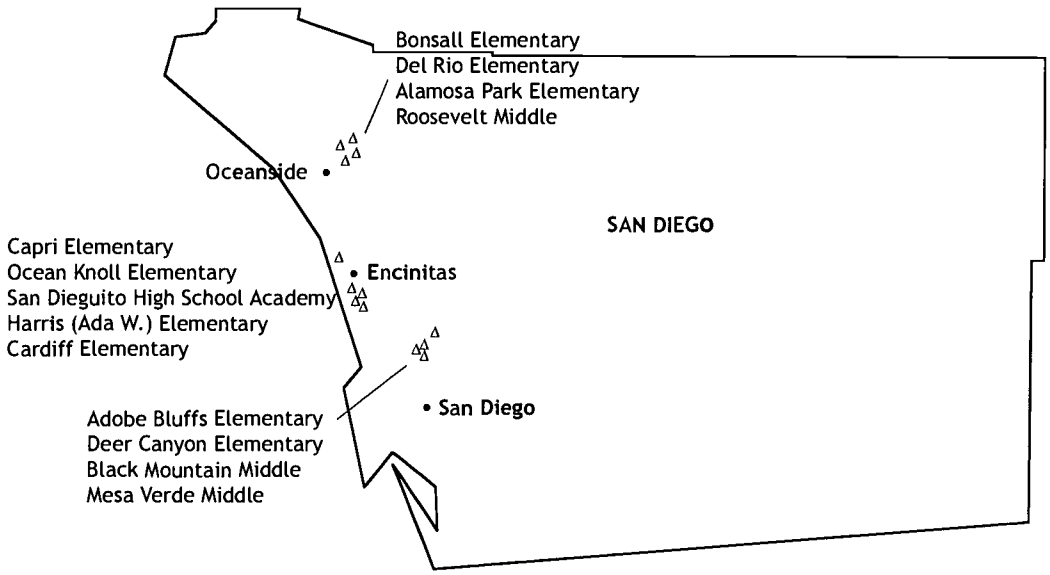
SOURCE: Environmental Working Group, from 1998 pesticide use reports.

ORANGE COUNTY

Orange County is unique because it combines a densely populated Southern California suburb with one of the state's major agricultural areas. In 1998, 40 Orange County schools with total enrollment of about 35,000 were within 1.5 miles of 79,000 pounds of methyl bromide use. Four Orange County schools - one in Tustin and three in Irvine - were located near use of at least 18,000 pounds.

Almost all of the methyl bromide applied near schools in Orange County in 1998 was for outdoor preplant fumigation of otherwise unspecified crops. All but a handful of the total was applied in August and September.

Fig. 7. Schools in San Diego County near the most methyl bromide use.



SOURCE: Environmental Working Group, from 1998 pesticide use reports.

SAN DIEGO COUNTY

San Diego County has 27 schools with total enrollment of about 22,000 students that were within 1.5 miles of 78,000 pounds of methyl bromide use in 1998. Three schools in Oceanside were near applications of more than 25,000 pounds, and one San Diego elementary school was within 1.5 miles of at least 10,000 pounds of use.

In the San Diego area, methyl bromide's major use near schools was on tomatoes, with about 66 percent of the total. Another 30 percent was used for indoor or outdoor growing of cut flowers and plants. Use is heaviest from February to June, with almost 30 percent of the year's total applied in March.

Table 6. Schools within 1.5 miles of at least 100 pounds of methyl bromide use in 1998, by county.

County Rank	State Rank	School	City	Percent Non-Anglo	Total Enrollment (1998)	Methyl Bromide Use 1998 (lbs)
			Butte County			
1 (tie)	281	McKinley Elementary	Gridley	54%	301	1,200
1 (tie)	281	Sycamore Elementary	Gridley	46%	477	1,200
3	344	Manzanita Elementary	Gridley	16%	240	600
			Fresno County			
1	41	Lone Star Elementary	Fresno	73%	341	26,700
2	101	Orange Center Elementary	Fresno	93%	379	8,600
3	120	Reyburn Intermediate	Clovis	N/A	0	6,500
4	140	Clay Elementary	Kingsburg	30%	218	5,100
5 (tie)	144	West Fresno Middle	Fresno	99%	299	4,800
5 (tie)	144	West Fresno Elementary	Fresno	99%	688	4,800
7	153	Garfield Elementary	Clovis	22%	844	4,500
8	156	Temperance-Kutner Elementary	Fresno	60%	736	4,400
9	167	Sunset Elementary	Fresno	97%	310	3,700
10	175	Fancher Creek Elementary	Fresno	72%	868	3,300
11	181	Fairmont Elementary	Sanger	36%	624	3,100
12	184	Conejo Middle	Selma	73%	190	3,000
13	189	Raisin City Elementary	Raisin City	84%	284	2,800
14 (tie)	206	West Park Elementary	Fresno	84%	218	2,400
14 (tie)	206	West Park Charter Academy	Fresno	76%	96	2,400
16	218	Wash (John S.) Elementary	Fresno	46%	215	2,300
17	224	Red Bank Elementary	Clovis	23%	691	2,200
18 (tie)	229	Balderas Elementary	Fresno	99%	972	2,100
18 (tie)	229	Aynesworth Elementary	Fresno	97%	949	2,100
20	234	Alta Sierra Intermediate	Clovis	33%	1695	2,100
21 (tie)	243	Enterprise Alternative	Clovis	40%	140	1,900
21 (tie)	243	Weldon Elementary	Clovis	46%	794	1,900
21 (tie)	243	Clark Intermediate	Clovis	39%	1800	1,900
24	247	Martinez (John C.) Elementary	Parlier	100%	540	1,800
25	254	Cole Elementary	Clovis	30%	785	1,700
26	259	Storey Elementary	Fresno	97%	1021	1,600
27	263	Riverview Elementary	Parlier	61%	422	1,500
28 (tie)	267	Cedarwood Elementary	Clovis	19%	590	1,300
28 (tie)	267	Cox Elementary	Clovis	33%	661	1,300
30 (tie)	275	Lane Elementary	Fresno	96%	1259	1,200
30 (tie)	275	Sunnyside High School	Fresno	N/A	0	1,200
30 (tie)	275	Ayer Elementary	Fresno	86%	911	1,200
30 (tie)	275	Kings Canyon Middle	Fresno	90%	1029	1,200
34 (tie)	287	Fremont School	Fowler	79%	364	1,100
34 (tie)	287	Marshall Elementary	Fowler	75%	347	1,100
34 (tie)	287	Fowler High	Fowler	78%	599	1,100
34 (tie)	287	Sutter (John) Middle School	Fowler	82%	493	1,100
38	319	Terry Elementary	Selma	67%	178	900
39 (tie)	326	Washington High	Fresno	78%	1249	800
39 (tie)	326	Washington Colony Elementary	Fresno	74%	443	800
39 (tie)	326	Easton Continuation High	Fresno	85%	40	800
42	343	Rafer Johnson Junior High	Kingsburg	48%	413	600
43	348	Kingsburg Community Charter Ext.	Kingsburg	17%	122	600
44	368	Viking Elementary	Fresno	55%	830	300
45	390	Indianola Elementary	Selma	91%	384	300
			Kern County			
1	44	Mountain View Middle	Lamont	93%	823	24,800
2	84	Lakeside Elementary	Bakersfield	37%	475	11,000
3 (tie)	232	Richland Primary	Shafter	84%	1039	2,100
3 (tie)	232	Richland Intermediate	Shafter	84%	946	2,100

Table 6 (cont.). Schools within 1.5 miles of at least 100 pounds of methyl bromide use in 1998.

County Rank	State Rank	School	City	Percent Non-Anglo	Total Enrollment (1998)	Methyl Bromide Use 1998 (lbs)
			Kings County			
1	45	Gardenside Elementary	Hanford	81%	230	23,700
2	79	Kings River-Hardwick Elementary	Hanford	32%	576	11,400
3 (tie)	382	Parkview Middle	Armona	62%	437	300
3 (tie)	382	Martin Luther King, Jr., Elementary	Hanford	72%	667	300
3 (tie)	382	Lincoln Elementary	Hanford	86%	504	300
			Los Angeles County			
1 (tie)	146	Longfellow	Azusa	87%	308	4,800
1 (tie)	146	Dalton (Henry) Elementary	Azusa	85%	488	4,800
1 (tie)	146	Lee (Charles H.) Elementary	Azusa	92%	640	4,800
4	228	Plymouth Elementary	Monrovia	70%	661	2,100
5 (tie)	356	San Fernando Senior High	San Fernando	99%	4358	500
5 (tie)	356	San Fernando Elementary	San Fernando	99%	857	500
5 (tie)	356	O'Melveny Elementary	San Fernando	98%	755	500
5 (tie)	356	San Jose Elementary	Mission Hills	85%	796	500
9 (tie)	377	Don Julian Elementary	La Puente	96%	829	300
9 (tie)	377	Puente Hills High	La Puente	78%	77	300
9 (tie)	377	Valley Alternative High (CONT)	La Puente	91%	232	300
12 (tie)	408	Vista	San Dimas	44%	168	100
12 (tie)	408	Chaparral High	San Dimas	42%	107	100
12 (tie)	408	Ramona Middle	La Verne	36%	1357	100
12 (tie)	408	Ekstrand (Fred) Elementary	San Dimas	55%	610	100
12 (tie)	408	Shull (Arma J.) Elementary	San Dimas	42%	545	100
			Madera County			
1	52	Dixieland Elementary	Madera	63%	306	19,200
2	106	Eastin-Arcola Elementary	Madera	93%	462	8,400
3	346	Millview Elementary	Madera	91%	987	600
			Merced County			
1	13	Plainsburg Elementary	Merced	37%	104	43,400
2	27	Livingston High	Livingston	85%	1128	33,700
3	39	Campus Park Elementary	Livingston	92%	667	28,400
4 (tie)	64	Irwin High	Hilmar	27%	37	15,800
4 (tie)	64	Hilmar Senior High	Hilmar	17%	711	15,800
6 (tie)	99	Colony Basic Skills Alt. High	Hilmar	19%	36	8,600
6 (tie)	99	Hilmar Middle	Hilmar	14%	383	8,600
8	129	Yamato Colony Elementary	Livingston	88%	760	6,000
9	138	Elim Elementary	Hilmar	18%	971	5,200
10	152	Crookham (Sybil N.) Elementary	Winton	87%	561	4,500
11	165	Hopeton Elementary	Snelling	70%	100	3,900
12	180	El Capitan Elementary	Delhi	66%	363	3,200
13	198	Schendel Elementary	Delhi	70%	907	2,500
14	235	Ballico Elementary	Ballico	54%	153	2,100
15 (tie)	256	Mitchell Senior Elementary	Atwater	56%	835	1,600
15 (tie)	256	Mitchell Elementary	Atwater	69%	535	1,600
15 (tie)	256	Colburn (Aileen) Elementary	Atwater	70%	486	1,600
18 (tie)	329	Delhi High	Delhi	67%	327	800
18 (tie)	329	Delhi Middle	Delhi	70%	343	800
20	334	Livingston Middle	Livingston	92%	930	700
21	391	Washington Elementary	Winton	65%	127	300
			Monterey County			
1	3	Alisal High	Salinas	98%	1796	105,600
2	5	Chavez (Cesar E.) Elementary	Salinas	98%	907	73,900
3	6	La Joya Elementary	Salinas	73%	937	65,400
4 (tie)	8	Gavilan View Middle	Salinas	76%	961	50,400
4 (tie)	8	Santa Rita Elementary	Salinas	83%	909	50,400
6	37	Elkhorn Elementary	Castroville	52%	512	29,800

Table 6 (cont.). Schools within 1.5 miles of at least 100 pounds of methyl bromide use in 1998.

County Rank	State Rank	School	City	Percent Non-Anglo	Total Enrollment (1998)	Methyl Bromide Use 1998 (lbs)
			Monterey County (cont.)			
7	47	Lagunita Elementary	Salinas	16%	37	21,900
8	48	N Monterey Cty Cntr for Ind. Study	Castroville	33%	249	21,400
9 (tie)	60	North Monterey County High	Castroville	47%	1421	16,700
9 (tie)	60	Central Bay Continuation High	Castroville	74%	35	16,700
11	76	Gambetta (Joseph) Middle	Castroville	66%	547	11,800
12	111	Castroville Elementary	Castroville	86%	507	7,800
13 (tie)	118	Monterey Park Elementary	Salinas	68%	492	7,000
13 (tie)	118	Lincoln Elementary	Salinas	81%	681	7,000
15 (tie)	131	Creekside Elementary	Salinas	73%	266	5,600
15 (tie)	131	Frank Paul Elementary	Salinas	98%	833	5,600
15 (tie)	131	Mt. Toro High	Salinas	82%	343	5,600
15 (tie)	131	Rocca Barton (Virginia) Elementary	Salinas	99%	1136	5,600
15 (tie)	131	Steinbeck (John E.) Elementary	Salinas	63%	544	5,600
20	193	Bardin Elementary	Salinas	97%	910	2,600
21	240	Mission Elementary	Soledad	54%	89	2,000
			Napa County			
1	58	McPherson Elementary	Napa	70%	667	17,900
2 (tie)	177	St. Helena Elementary	St. Helena	44%	680	3,200
2 (tie)	177	Madrone High	St. Helena	47%	19	3,200
2 (tie)	177	St. Helena Senior High	St. Helena	33%	546	3,200
5 (tie)	304	Calistoga Junior-Senior High	Calistoga	44%	376	1,000
5 (tie)	304	Palisades High	Calistoga	18%	17	1,000
			Orange County			
1	46	Tustin Ranch Elementary	Tustin	42%	563	23,400
2 (tie)	54	Northwood	Irvine	41%	561	18,500
2 (tie)	54	Santiago Hills	Irvine	38%	673	18,500
2 (tie)	54	Canyon View Elementary	Irvine	42%	318	18,500
5 (tie)	91	Cox (James H.) Elementary	Fountain Valley	49%	690	9,500
5 (tie)	91	Northcutt (Mamie L.) Elementary	Fountain Valley	72%	627	9,500
5 (tie)	91	Los Amigos High	Fountain Valley	91%	2064	9,500
5 (tie)	91	Masuda (Kazuo) Middle	Fountain Valley	41%	708	9,500
9	108	Northwood High	Irvine	N/A	0	7,900
10	161	Linda Vista Elementary	Orange	21%	509	4,100
11 (tie)	170	Westminster High	Westminster	82%	2567	3,400
11 (tie)	170	Willmore Elementary	Westminster	93%	655	3,400
11 (tie)	170	Webber Elementary	Westminster	88%	482	3,400
14 (tie)	194	Buena Park Junior High	Buena Park	73%	987	2,600
14 (tie)	194	Temple (Raymond) Elementary	Buena Park	55%	424	2,600
14 (tie)	194	Buena Terra Elementary	Buena Park	41%	495	2,600
14 (tie)	194	San Marino Elementary	Buena Park	51%	604	2,600
18 (tie)	213	Beswick (Benjamin F.) Elementary	Tustin	88%	678	2,300
18 (tie)	213	Currie (A. G.) Middle	Tustin	81%	741	2,300
18 (tie)	213	Thorman (Jeane) Elementary	Tustin	93%	738	2,300
18 (tie)	213	Nelson (W. R.) Elementary	Tustin	56%	606	2,300
22 (tie)	225	Valencia High	Placentia	65%	1927	2,100
22 (tie)	225	Kraemer Junior High	Placentia	71%	1349	2,100
22 (tie)	225	Tynes (John O.) Elementary (OH)	Placentia	81%	1024	2,100
25	242	Paine (Mabel M.) Elementary	Yorba Linda	29%	406	1,900
26	255	Yorba Linda Middle	Yorba Linda	14%	636	1,700
27	283	Concordia Elementary	San Clemente	23%	622	1,100
28 (tie)	313	Sycamore Junior High	Anaheim	94%	1355	900
28 (tie)	313	Lincoln (Abraham) Elementary	Anaheim	98%	1021	900
28 (tie)	313	Edison (Thomas) Elementary	Anaheim	96%	1092	900
28 (tie)	313	Anaheim High	Anaheim	93%	2398	900
28 (tie)	313	Guinn (James M.) Elementary	Anaheim	82%	842	900
33 (tie)	335	Hazard (R. F.) Elementary	Santa Ana	99%	767	700
33 (tie)	335	Rosita Elementary	Santa Ana	97%	744	700

Table 6 (cont.). Schools within 1.5 miles of at least 100 pounds of methyl bromide use in 1998.

County Rank	State Rank	School	City	Percent Non-Anglo	Total Enrollment (1998)	Methyl Bromide Use 1998 (lbs)
		Orange County (cont.)				
33 (tie)	335	Woodbury Elementary	Garden Grove	87%	724	700
33 (tie)	335	Heritage Elementary	Santa Ana	95%	700	700
37 (tie)	385	MacArthur (Douglas) Fundamental Int.	Santa Ana	88%	1174	300
37 (tie)	385	Taft (William Howard) Elementary	Santa Ana	84%	1128	300
39	393	Foothill Ranch Elementary	Foothill Ranch	29%	1081	200
40	401	Fletcher Elementary	Orange	44%	761	200
		Riverside County				
1	15	Coachella Valley High	Thermal	99%	2659	42,800
2	57	Westside Elementary	Thermal	95%	831	18,200
3	123	Chavez (Cesar) Elementary	Coachella	99%	812	6,100
4 (tie)	162	Valley View Elementary	Coachella	100%	764	4,000
4 (tie)	162	Bobby G. Duke	Coachella	100%	731	4,000
4 (tie)	162	Peter Pendleton Elementary	Coachella	98%	517	4,000
7	191	Anthony (Susan B.) Elementary	Corona	42%	870	2,800
8	381	Auburndale Intermediate	Corona	63%	1235	300
9	392	Arizona Intermediate	Riverside	50%	1156	200
		San Benito County				
1	70	Aromas Elementary	Aromas	38%	556	13,400
2 (tie)	186	Rancho San Justo Elementary	Hollister	56%	917	2,800
2 (tie)	186	Sunnyslope Elementary	Hollister	58%	796	2,800
2 (tie)	186	Southside Elementary	Hollister	31%	157	2,800
5	211	Anzar High	San Juan Bautista	47%	274	2,400
6 (tie)	221	Gabilan Hills	Hollister	70%	696	2,200
6 (tie)	221	Marguerite Maze Middle	Hollister	66%	840	2,200
6 (tie)	221	San Andreas Continuation High	Hollister	70%	206	2,200
		San Bernardino County				
1 (tie)	157	Sierra Vista Elementary	Upland	49%	620	4,200
1 (tie)	157	Foothill Knolls Elementary	Upland	46%	509	4,200
2	219	Mariposa Elementary	Ontario	95%	936	2,300
3 (tie)	250	Del Norte Elementary	Ontario	93%	921	1,700
3 (tie)	250	Wiltsey (Ray) Middle	Ontario	91%	874	1,700
3 (tie)	250	Corona Elementary	Ontario	93%	885	1,700
6	253	Mission Elementary	Ontario	78%	1102	1,700
7 (tie)	291	El Rancho Elementary	Chino	81%	853	1,100
7 (tie)	291	Cattle (Howard) Elementary	Chino	48%	884	1,100
7 (tie)	291	Cortez (Alicia E.) Elementary	Chino	61%	1069	1,100
10 (tie)	295	Linda Vista Elementary	Ontario	94%	476	1,100
10 (tie)	295	De Anza Middle	Ontario	92%	849	1,100
10 (tie)	295	Sultana Elementary	Ontario	94%	1020	1,100
10 (tie)	295	Bon View Elementary	Ontario	84%	885	1,100
		San Diego County				
1	26	Del Rio Elementary	Oceanside	77%	909	34,100
2 (tie)	42	Alamosa Park Elementary	Oceanside	44%	1070	25,200
2 (tie)	42	Roosevelt Middle	Oceanside	48%	1644	25,200
4	67	Bonsall Elementary	Bonsall	43%	840	14,700
5 (tie)	102	Adobe Bluffs Elementary	San Diego	30%	503	8,500
5 (tie)	102	Black Mountain Middle	San Diego	36%	1171	8,500
5 (tie)	102	Deer Canyon Elementary	San Diego	32%	488	8,500
5 (tie)	102	Mesa Verde Middle	San Diego	35%	1479	8,500
9	117	Capri Elementary	Encinitas	56%	559	7,200
10 (tie)	124	Harris (Ada W.) Elementary	Cardiff-by-the-Sea	26%	514	6,000
10 (tie)	124	Cardiff Elementary	Cardiff-by-the-Sea	27%	386	6,000
10 (tie)	124	San Dieguito High School Academy	Encinitas	14%	1249	6,000
10 (tie)	124	Ocean Knoll Elementary	Encinitas	45%	577	6,000
14	176	North Coast Alternative High	Encinitas	24%	234	3,200

Table 6 (cont.). Schools within 1.5 miles of at least 100 pounds of methyl bromide use in 1998.

County Rank	State Rank	School	City	Percent Non-Anglo	Total Enrollment (1998)	Methyl Bromide Use 1998 (lbs)
			San Diego County (cont.)			
15	205	Park Dale Lane Elementary	Encinitas	18%	617	2,500
16	263	Hope Elementary	Carlsbad	27%	780	1,500
17	265	Mission Meadows Elementary	Oceanside	42%	958	1,400
18	283	San Onofre	San Clemente	36%	688	1,100
19	369	Buena Vista Elementary	Carlsbad	47%	501	300
20 (tie)	371	Valley Junior High	Carlsbad	30%	1122	300
20 (tie)	371	Magnolia Elementary	Carlsbad	28%	700	300
20 (tie)	371	Carlsbad High	Carlsbad	29%	2446	300
20 (tie)	371	Carlsbad Alternative	Carlsbad	N/A	0	300
20 (tie)	371	Pine Elementary	Carlsbad	69%	439	300
20 (tie)	371	Jefferson Elementary	Carlsbad	74%	372	300
26	406	Monte Vista Elementary	Vista	45%	800	200
27	413	Guajome Park Academy Charter	Vista	49%	1152	100
			San Joaquin County			
1	33	Calla High	Manteca	48%	241	31,300
2	75	New Haven Elementary	Manteca	25%	629	12,100
3	90	Linden High	Linden	37%	744	9,700
4	95	Jefferson Elementary	Tracy	37%	394	9,400
5	110	Van Allen Elementary	Escalon	33%	178	7,800
6	130	Colony Oak Elementary	Ripon	24%	439	5,800
7	136	Cowell (Joshua) Elementary	Manteca	45%	535	5,600
8 (tie)	201	Children's Center	Lodi	N/A	0	2,500
8 (tie)	201	Lawrence Elementary	Lodi	71%	626	2,500
10	203	Weston Elementary	Ripon	26%	475	2,500
11 (tie)	208	Ripon Elementary	Ripon	33%	428	2,400
11 (tie)	208	Ripon High	Ripon	26%	691	2,400
11 (tie)	208	Ripona Elementary	Ripon	26%	446	2,400
14	248	Live Oak Elementary	Lodi	42%	474	1,800
15	294	Waterloo Elementary	Stockton	43%	421	1,100
16	302	Vista High	Escalon	38%	26	1,000
17	311	Heritage Elementary	Lodi	83%	939	900
18	347	El Portal Middle	Escalon	28%	737	600
19	360	Glenwood Elementary	Stockton	31%	401	500
20	370	Waverly Elementary	Stockton	29%	362	300
21	380	Bohn (Louis A.) Elementary	Tracy	42%	550	300
22 (tie)	399	Dent Elementary	Escalon	26%	880	200
22 (tie)	399	Escalon High	Escalon	28%	910	200
24 (tie)	404	Davis Elementary	Stockton	60%	617	200
24 (tie)	404	Morada Middle	Stockton	78%	939	200
			San Luis Obispo County			
1 (tie)	81	Harloe Elementary	Arroyo Grande	25%	724	11,100
1 (tie)	81	Arroyo Grande High	Arroyo Grande	30%	2969	11,100
1 (tie)	81	Lopez High	Arroyo Grande	45%	163	11,100
4	89	Oceano Elementary	Oceano	78%	514	9,800
5 (tie)	121	North Oceano Elementary	Grover Beach	45%	599	6,200
5 (tie)	121	Grover Beach Elementary	Grover Beach	51%	515	6,200
7	183	Mesa Middle	Arroyo Grande	42%	776	3,000
8	220	Branch Elementary	Arroyo Grande	15%	277	2,200
9	325	Los Ranchos Elementary	San Luis Obispo	11%	589	800
			San Mateo County			
1	312	Cunha (Manuel F.) Intermediate	Half Moon Bay	28%	937	900

Table 6 (cont.). Schools within 1.5 miles of at least 100 pounds of methyl bromide use in 1998.

County Rank	State Rank	School	City	Percent Non-Anglo	Total Enrollment (1998)	Methyl Bromide Use 1998 (lbs)
		Santa Barbara County				
1	7	Ontiveros (Juan Pacifico) Elementary	Santa Maria	90%	913	51,400
2	10	Bonita Elementary	Santa Maria	91%	75	45,800
3	12	Tunnell (Martin Luther) Elementary	Santa Maria	54%	808	45,300
4	16	Adam (William Laird) Elementary	Santa Maria	92%	784	42,500
5	32	Fesler (Isaac) Elementary	Santa Maria	80%	795	31,600
6	59	Carpinteria High	Carpinteria	52%	803	17,500
7	87	Canalino Elementary	Carpinteria	66%	781	10,700
8 (tie)	112	Main Elementary	Carpinteria	55%	329	7,800
8 (tie)	112	Carpinteria Middle	Carpinteria	59%	731	7,800
10	168	Foothill Alternative High	Carpinteria	65%	17	3,600
11	350	Ballard	Solvang	7%	134	500
12	361	Hollister Elementary	Santa Barbara	53%	582	400
13 (tie)	364	Buren (Mary)	Guadalupe	97%	783	400
13 (tie)	364	McKenzie (Kermit) Junior High	Guadalupe	97%	305	400
		Santa Clara County				
1	389	Live Oak High	Morgan Hill	40%	2028	300
2 (tie)	414	Britton (Lewis H.) Middle	Morgan Hill	42%	1240	100
2 (tie)	414	Central High (CONT)	Morgan Hill	69%	108	100
2 (tie)	414	El Toro Elementary	Morgan Hill	46%	660	100
		Santa Cruz County				
1	4	Pajaro Middle	Watsonville	95%	504	76,300
2	17	Lakeview Middle	Watsonville	82%	763	41,300
3	21	Renaissance High	La Selva Beach	83%	235	38,300
4	28	Ohlone Elementary	Watsonville	98%	567	32,900
5	31	Hall (E. A.) Middle	Watsonville	95%	938	32,300
6 (tie)	34	Linscott (J. W.) Elementary	Watsonville	43%	180	30,100
6 (tie)	34	Watsonville High	Watsonville	89%	2646	30,100
8	36	MacQuiddy (T. S.) Elementary	Watsonville	93%	900	30,000
9	40	Salsipuedes Elementary	Watsonville	90%	705	27,500
10	85	Amesti Elementary	Watsonville	88%	653	10,900
11	86	Hall District Elementary	Watsonville	94%	718	10,800
12	88	Calabasas Elementary	Watsonville	90%	742	10,000
13	97	Rolling Hills Middle	Watsonville	92%	961	9,000
14	182	Bradley Elementary	Watsonville	27%	539	3,100
15 (tie)	366	Soquel High	Soquel	18%	1693	400
15 (tie)	366	Main Street Elementary	Soquel	19%	483	400
		Shasta County				
1	141	Oakview High	Anderson	12%	138	5,000
2	324	Prairie Elementary	Anderson	12%	323	800
		Solano County				
1	160	Suisun Valley Elementary	Suisun	29%	259	4,200
2	266	Wilson (B. Gale) Elementary	Fairfield	38%	924	1,300
3 (tie)	267	Vaca Pena Middle	Vacaville	34%	1230	1,300
3 (tie)	267	Cooper Elementary	Vacaville	23%	1033	1,300
3 (tie)	267	Callison (Jean) Elementary	Vacaville	31%	781	1,300
6	332	Tremont	Dixon	24%	745	700
		Sonoma County				
1 (tie)	73	Piner-Olivet Charter	Santa Rosa	46%	118	12,300
1 (tie)	73	Schaefer Elementary	Santa Rosa	26%	602	12,300
3	142	Alexander Valley Elementary	Healdsburg	39%	119	4,900
4	241	Foss Creek Elementary	Healdsburg	43%	435	1,900
5	318	Gravenstein Elementary	Sebastopol	9%	311	900

Table 6 (cont.). Schools within 1.5 miles of at least 100 pounds of methyl bromide use in 1998.

County Rank	State Rank	School	City	Percent Non-Anglo	Total Enrollment (1998)	Methyl Bromide Use 1998 (lbs)
		Stanislaus County				
1	68	Roselawn High	Turlock	54%	215	14,200
2	96	Stanislaus Elementary	Modesto	22%	381	9,200
3	98	Chatom Elementary	Turlock	29%	549	8,600
4 (tie)	115	Standiford Elementary	Modesto	35%	496	7,300
4 (tie)	115	Beard Elementary	Modesto	36%	484	7,300
6	159	Cunningham Elementary	Turlock	69%	793	4,200
7	166	Turlock Junior High	Turlock	44%	1711	3,900
8 (tie)	173	Franklin Elementary	Modesto	85%	892	3,400
8 (tie)	173	Pearson (Ethel) Elementary	Modesto	82%	428	3,400
10	190	Coffee (Stockard) Elementary	Modesto	26%	699	2,800
11	199	Stroud Elementary	Modesto	40%	634	2,500
12	217	Fairview Elementary	Modesto	74%	970	2,300
13	231	Johansen (Peter) High	Modesto	48%	2488	2,100
14 (tie)	236	Academy for Career Education	Turlock	N/A	0	2,000
14 (tie)	236	Osborn Elementary	Turlock	70%	859	2,000
16 (tie)	238	Teel Middle	Empire	48%	1205	2,000
16 (tie)	238	Empire Elementary	Empire	63%	584	2,000
18	260	Hart-Ransom Home-Based Aca. Ch.	Modesto	18%	293	1,600
19	261	Hart-Ransom Elementary	Modesto	33%	671	1,500
20	262	Oakdale Junior High	Oakdale	26%	668	1,500
21	267	Brown (Walter M.)	Turlock	37%	757	1,300
22 (tie)	273	Burbank Elementary	Modesto	73%	721	1,200
22 (tie)	273	Kirschen (Harriette) Elementary	Modesto	86%	829	1,200
24	285	Westport Elementary	Modesto	58%	527	1,100
25	286	Bret Harte Elementary	Modesto	87%	956	1,100
26	301	Mountain View Elementary	Turlock	33%	257	1,000
27	303	Cardozo Elementary	Riverbank	60%	683	1,000
28	331	Dena Boer	Salida	54%	774	700
29 (tie)	341	Hughson Elementary	Hughson	42%	718	700
29 (tie)	341	Hughson High	Hughson	26%	786	700
31	349	Moon (Richard M.)	Waterford	N/A	0	500
32 (tie)	414	Sipherd (Christine) Elementary	Modesto	34%	505	100
32 (tie)	414	Lakewood Elementary	Modesto	20%	461	100
		Sutter County				
1 (tie)	49	Meridian Elementary	Meridian	29%	45	19,700
1 (tie)	49	Winship Elementary	Meridian	13%	54	19,700
3	114	Barry Elementary	Yuba City	44%	669	7,400
4	139	Central Gaither Elementary	Yuba City	60%	205	5,200
5	143	Lincoln Elementary	Yuba City	59%	875	4,800
6	169	Franklin Elementary	Yuba City	19%	374	3,500
7	192	Encinal Elementary	Live Oak	52%	54	2,700
8	200	Live Oak Middle	Live Oak	61%	517	2,500
9	333	Luther Elementary	Live Oak	64%	738	700
10	339	Andros Karperos Middle	Yuba City	48%	1059	700
11	340	Lincrest Elementary	Yuba City	29%	801	700
12	345	Tierra Buena Elementary	Yuba City	34%	792	600
		Tehama County				
1	69	Antelope Elementary	Red Bluff	12%	382	14,000
2	77	Bend Elementary	Red Bluff	13%	71	11,700
3	407	Richfield Elementary	Corning	19%	187	100
		Tulare County				
1	72	Outside Creek Elementary	Visalia	41%	136	12,800
2	78	Union Elementary	Visalia	83%	345	11,500
3	151	Sierra Vista High	Dinuba	86%	83	4,600
4	155	Esperanza H.S. (Ind. Study)	Cutler	80%	56	4,500
5	212	Grand View Elementary	Dinuba	75%	202	2,300

Table 6 (cont.). Schools within 1.5 miles of at least 100 pounds of methyl bromide use in 1998.

County Rank	State Rank	School	City	Percent Non-Anglo	Total Enrollment (1998)	Methyl Bromide Use 1998 (lbs)
			Tulare County (cont.)			
6	246	Roosevelt Elementary	Dinuba	76%	601	1,800
7	249	Cutler Elementary	Cutler	98%	849	1,700
8 (tie)	275	Golden Oak Elementary	Visalia	46%	691	1,200
8 (tie)	275	Valley Oak Middle	Visalia	48%	1126	1,200
10	310	Buckley (William R.) Elementary	Porterville	48%	381	1,000
11	323	Washington Intermediate	Dinuba	81%	680	900
12 (tie)	351	Lovell High	Cutler	99%	70	500
12 (tie)	351	Palm Elementary	Orosi	95%	678	500
12 (tie)	351	Yettem Continuation High	Yettem	92%	39	500
12 (tie)	351	Orosi High	Orosi	95%	836	500
12 (tie)	351	Golden Valley	Orosi	98%	283	500
17 (tie)	362	Pinkham Elementary	Visalia	31%	700	400
17 (tie)	362	Mineral King Elementary	Visalia	62%	936	400
19 (tie)	402	Hurley New Elementary	Visalia	43%	565	200
19 (tie)	402	Willow Glen Elementary	Visalia	61%	785	200
			Ventura County			
1	1	Rio Mesa High	Oxnard	76%	2438	144,200
2	2	Rio Plaza Elementary	Oxnard	90%	444	126,500
3	11	Adolfo Camarillo High	Camarillo	26%	2650	45,400
4	14	Laguna Vista Elementary	Oxnard	57%	486	43,000
5	18	Oxnard High	Oxnard	78%	3030	41,000
6 (tie)	19	Rio Real Elementary	Oxnard	94%	692	40,300
6 (tie)	19	Rio Del Valle Junior High	Oxnard	86%	736	40,300
8	22	Brekke (Norman R.) Elementary	Oxnard	98%	838	36,500
9	23	Tierra Vista Elementary	Oxnard	83%	643	35,000
10	24	Rio Lindo Elementary	Oxnard	82%	574	34,800
11	25	Sierra Linda Elementary	Oxnard	86%	896	34,700
12 (tie)	29	Mar Vista Elementary	Oxnard	93%	549	32,300
12 (tie)	29	Ocean View Junior High	Oxnard	81%	762	32,300
14	38	Los Primeros Structured	Camarillo	32%	542	28,500
15	51	El Rio Elementary	Oxnard	84%	628	19,700
16	53	Frontier High	Camarillo	84%	727	18,900
17 (tie)	62	Channel Islands High	Oxnard	92%	2782	16,500
17 (tie)	62	Lemonwood Elementary	Oxnard	95%	890	16,500
19	66	Las Colinas	Camarillo	18%	949	15,700
20	71	Ritchen (Emilie) Elementary	Oxnard	62%	1072	13,400
21	80	El Rancho Structured	Camarillo	63%	448	11,400
22	107	Saticoy Elementary	Saticoy	48%	722	8,000
23	128	Briggs Elementary	Santa Paula	85%	273	6,000
24	137	Williams (Fred) Elementary	Oxnard	91%	764	5,400
25	185	Serra (Junipero) Elementary	Ventura	32%	846	2,900
26	204	Dos Caminos	Camarillo	31%	472	2,500
27 (tie)	299	McAuliffe (Christa) Elementary	Oxnard	67%	1175	1,000
27 (tie)	299	Marina West Elementary	Oxnard	80%	983	1,000
29 (tie)	306	Garden Grove Elementary	Simi Valley	28%	615	1,000
29 (tie)	306	Santa Susana Elementary	Simi Valley	47%	540	1,000
29 (tie)	306	Santa Susana High	Simi Valley	28%	865	1,000
29 (tie)	306	Township Elementary	Simi Valley	14%	531	1,000
33 (tie)	320	Hueneme Elementary	Port Hueneme	62%	603	900
33 (tie)	320	Haycox (Art) Elementary	Oxnard	97%	749	900
33 (tie)	320	Bard (Richard) Elementary	Port Hueneme	75%	731	900
36 (tie)	385	Montalvo Elementary	Ventura	65%	433	300
36 (tie)	385	Mound	Ventura	22%	568	300
38	394	Somis Elementary	Somis	40%	441	200
39 (tie)	395	Poinsettia Elementary	Ventura	21%	546	200
39 (tie)	395	Buena Vista High	Ventura	45%	22	200
39 (tie)	395	Buena High	Ventura	33%	2202	200
39 (tie)	395	Elmhurst Elementary	Ventura	40%	580	200

Table 6 (cont.). Schools within 1.5 miles of at least 100 pounds of methyl bromide use in 1998.

County Rank	State Rank	School	City	Percent Non-Anglo	Total Enrollment (1998)	Methyl Bromide Use 1998 (lbs)
			Yuba County			
1	109	Cordua Elementary	Marysville	54%	100	7,900
2 (tie)	149	McKenney (Anna) Intermediate	Marysville	38%	626	4,800
2 (tie)	149	Kynoch Elementary	Marysville	31%	696	4,800
4	154	Wheatland Elementary	Wheatland	36%	228	4,500

SOURCE: Environmental Working Group, from 1998 pesticide use reports.

METHODOLOGY

This analysis is based on pesticide use reporting data collected annually by DPR and school location information from the California Department of Education. The PUR data is plotted geographically in roughly 1-mile square sections. EWG's analysis located public elementary, middle and high schools within these sections and calculated the amount of methyl bromide use reported in the sections that were entirely located within 1.5 miles of the school in 1998. This analysis should be considered conservative, because use reporting sections that fell partly within the circle were excluded, even though some uses of methyl bromide within that section could have fallen within the 1.5 mile range of the school. (Figure 7.)

Many schools are much closer than 1.5 miles from methyl bromide use -- some are surrounded.

Many of the schools identified in this report are far closer than 1.5 miles to methyl bromide application sites. Statistical analysis indicates that about a third of the schools are within one-half mile of fields where methyl bromide was used, and about two thirds are between one-half and 1.5 miles of the fields.

The PUR data is reported in square mile units that do not permit identifying the precise location of fields next to particular schools. However in many cases, strawberries and other crops are planted directly adjacent to school grounds. For example, Brekke Middle School in Oxnard is bordered on three sides by strawberry fields; about 36,500 pounds of methyl bromide were applied within 1.5 miles of the school in 1998.

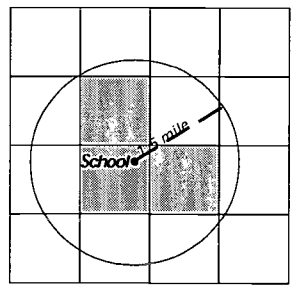


Fig. 7. Only fields that fell entirely within a 1.5-mile radius were counted for EWG's analysis.

In 1998 EWG conducted an analysis of methyl bromide use near schools based on the pesticide use reporting data for 1995. (EWG 1998.) That analysis estimated that more than 2.4 million pounds of methyl bromide were used within 1.5 miles of 758 California schools in 1995. Since then, DPR has made significant improvements both to the pesticide use database and the 1-mile section maps. In addition, the analysis conducted in 1995 attempted to account for methyl bromide use near both public and private schools, while the current analysis looks only at public schools. For these reasons the two analyses are not directly comparable, and the current findings should be considered more precise.

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EWG CALIFORNIA
1904 FRANKLIN ST. #515
OAKLAND, CA 94612
TEL. (510) 444-0973
FAX (510) 444-0982
california@ewg.org
www.ewg.org/california

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